

# MFRP siRNA (h): sc-72373

## BACKGROUND

MFRP (membrane frizzled-related protein) is a single pass type II membrane protein with two cubilin (CUB) domains, two LDL-receptor class A domains, a cysteine-rich domain (CRD) and seven N-glycosylation sites. The C-terminal CRD is related to the Wnt-binding domain of the frizzled family of transmembrane proteins suggesting that MFRP may act as a Wnt receptor. MFRP is predominantly expressed in retinal pigment epithelial cells, colocalizing to the plasma membrane with CTRP5. MFRP interacts with CTRP5 via its CUB domain and may play a role in the development of the eye. Functional MFRP is necessary for photoreceptor maintenance and appears to regulate the axial length of the eye. Mutations in the gene encoding MFRP can affect various structures in the eye and may result in nanophthalmos 2 (NNO2), an eye disorder characterized by extreme hyperopia.

## REFERENCES

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4. Pauer, G.J., et al. 2005. Mutation screen of the membrane-type frizzled-related protein (MFRP) gene in patients with inherited retinal degenerations. *Ophthalmic Genet.* 26: 157-161.
5. Sundin, O.H., et al. 2005. Extreme hyperopia is the result of null mutations in MFRP, which encodes a frizzled-related protein. *Proc. Natl. Acad. Sci. USA* 102: 9553-9558.
6. Katoh, M. and Katoh, M. 2005. Identification and characterization of rat Ror1 and Ror2 genes in silico. *Int. J. Mol. Med.* 15: 533-538.
7. Ayala-Ramirez, R., et al. 2006. A new autosomal recessive syndrome consisting of posterior microphthalmos, retinitis pigmentosa, foveoschisis, and optic disc drusen is caused by a MFRP gene mutation. *Mol. Vis.* 12: 1483-1489.

## CHROMOSOMAL LOCATION

Genetic locus: MFRP (human) mapping to 11q23.3.

## PRODUCT

MFRP siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MFRP shRNA Plasmid (h): sc-72373-SH and MFRP shRNA (h) Lentiviral Particles: sc-72373-V as alternate gene silencing products.

For independent verification of MFRP (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-72373A, sc-72373B and sc-72373C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

MFRP siRNA (h) is recommended for the inhibition of MFRP expression in human cells.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10  $\mu$ M in 66  $\mu$ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MFRP gene expression knockdown using RT-PCR Primer: MFRP (h)-PR: sc-72373-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.